WHAT IS CLAIMED IS

1. An ink-jet recording apparatus comprising:

a containing member which contains a recording medium which has a base member and granular material coated on both sides of the base member, and roughness of the surfaces of the coated granular material is smaller than the roughness of the base member;

a printing unit comprising an ink-jet recording head which jets recording liquid onto the recording medium;

a conveyance unit and a conveyance path for conveying the recording medium, one side of which has been already printed, into the printing unit again in order to print image onto the other side thereof; and

a unit which enables the printing unit to print image on the recording medium such that the vertical orientations of the images printed both sides of the recording medium are coincide with each other.

2. The ink-jet recording apparatus as claimed in claim 1, wherein both sides of the granular material is substantially symmetrically coated on the base member with respect to the center line of the base member.

3. An ink-jet recording apparatus comprising:

a first containing member containing a first recording medium;

a second containing member which contains a second recording medium, and said second recording medium having a base member and a granular material coated on both surfaces of said base member, and roughness of both surfaces of said coated granular material is smaller than the roughness of the base member, and both granular material is substantially symmetrically coated on the base member with respect to the center line of the base member;

a printing unit comprising an ink-jet recording head which jets recording liquid onto the first recording medium or the second recording medium;

a conveyance unit and a conveyance path for conveying the second recording medium, one side of which

has been already printed, into the printing unit again in order to print image onto the other side thereof; and

a unit which enables the printing unit to print image on the other side of the second recording medium such that the vertical orientations of the images printed both sides of the recording medium are coincide with each other,

wherein:

the second containing member containing the second recording medium is distinguishable from the first containing member.

4. The ink-jet recording apparatus as claimed in claim 1, wherein the recording medium is temporarily stopped in the conveyance path.

5. The ink-jet recording apparatus as claimed in claim 1, wherein a heating unit is provided in the conveyance path.

6. The ink-jet recording apparatus as claimed in claim 1, further comprising a containing member which temporarily contains the recording medium on the conveyance path.

7. The ink-jet recording apparatus as claimed in claim 1, wherein:

the ink-jet recording head has a multi-nozzle-type ink-jet recording head which jets ink with a frequency substantially from 1 kHz through 40 kHz per nozzle on demand and configured so as to jets a plurality of colors of ink; and

the recording medium is conveyed to a position that faces the nozzle surfaces of the multi-nozzle-type ink-jet recording head during recording.

8. The ink-jet recording apparatus as claimed in claim 7, wherein:

the nozzles of the ink-jet recording head are

arranged longitudinally so as to cover a printing width of the recording medium on which the image is to be printed, and said nozzles have a cross-sectional area in a range between 10 μm2 and 600 μm2, and the ink-jet recording head has 1000 through 100000 nozzles in the nozzle arrangement density of 400 dpi through 3200 dpi.

9. The ink-jet recording apparatus as claimed in claim 12, further comprising a recording medium heating unit having a heating range extending along the direction perpendicular to the recording medium conveyance direction so as to cover a range larger than the printing width of the recording medium.

10. The ink-jet recording apparatus as claimed in claim 1, wherein:

the unit which enables the printing unit to print image on the recording medium such that the vertical orientations of the images formed on both sides

of the recording medium are coincide with one each other comprises:

a rotation control mechanism which rotates the orientation of the recording medium by substantially 180 degrees.

11. The ink-jet recording apparatus as claimed in claim 1, wherein:

the unit which enables the printing unit to print image on the recording medium such that the vertical orientations of the images formed on both sides of the recording medium are coincide with each another has:

a memory for storing image data that is used for printing image on the back side of the recording medium, front side of which has been already printed; and

the unit sends the image data to the ink-jet recording head in the reverse order so that the image data is printed on the back side of the recording medium from bottom to top direction.

12. The ink-jet recording apparatus as claimed in claim 1, wherein:

the unit, which enables the printing unit to print image on the recording medium such that the vertical orientations of the images formed both sides of the recording medium are coincide with each other, comprises:

a twisted path provided on the conveyance path, the shape of which is twisted so that the front and back sides of the recording medium, which passes through the twisted path, is turned upside down for substantially 180 degrees.

13. An ink-jet copier comprising:

a scanner which reads an original image placed on an original table, so as to form image data therefrom in sequence;

a printing unit which jets ink onto a recording surface of a recording medium based on the image data provided from the scanner; and

a recording medium conveyance unit disposed below the printing unit for conveying and ejecting the

recording medium in a predetermined timing according to the recording operation,

a containing member which contains a recording medium having a base member and granular material coated on both sides of the base member, and roughness of the coated granular material is smaller than the roughness of the base member; and

a unit which enables the printing unit to print the images on the recording medium such that the vertical orientations of the images printed on both sides of the recording medium are coincide with each other, wherein:

the printing unit has a multi-nozzle-type ink-jet recording head which jets ink with a frequency from 1 kHz through 40 kHz per nozzle on demand, and the ink-jet recording head is arranged so as to jet a plurality of colors of ink; and

the recording medium conveyance unit includes:

a first conveyance unit that conveys the recording medium into a position that faces the nozzle surfaces of the multi-nozzle-type ink-jet recording head; and

a second conveyance unit and a conveyance path for conveying the recording medium, one side of which has been already printed, into the printing unit again

in order to printing image onto the other side thereof.

14. The ink-jet copier as claimed in claim 13, wherein:

the unit which enables the printing unit to print image on the recording medium such that the vertical orientations of the images formed both sides of the recording medium are coincide with each other comprises:

a rotation control mechanism which rotates the orientation of the recording medium by substantially 180 degrees.

15. The ink-jet copier as claimed in claim 13, wherein:

the nozzles of the ink-jet recording head are arranged longitudinally so as to cover a printing width of the recording medium, on which the image is to be printed, and

said nozzles have a cross-sectional area in a range between 10 μm2 and 600 μm2,

and the ink-jet recording head has 1000 through 100000 nozzles in the nozzle arrangement density of 400 dpi through 3200 dpi.

16. The ink-jet copier as claimed in claim 15, further comprising:

a plurality of recording media; and

a plurality of containing members containing the plurality of recording media,

wherein:

at least one of the plurality of recording media comprises a recording medium, both sides of the granular material is substantially symmetrically coated on the base member with respect to the center line of the base member; and

the containing member, which contains said recording medium, is distinguishable from the other containing members.

17. The ink-jet copier as claimed in claim 22, further comprising a recording medium heating unit that has a heating range extending along the direction perpendicular to the recording medium conveyance direction so as to cover a range larger than a printing width of the recording medium, on which the image is to be printed.

18. A recording medium used in an ink-jet recording apparatus, which has a containing member which contains the recording medium; a conveyance path for conveying the recording medium; one side of which has been already printed, into a printing unit again in order to printing image onto the other side thereof; and a unit for printing image on the recording medium such that the vertical orientations of the images printed both sides of the recording medium are coincide with each other, comprising:

a base member;

and granular material coated inside of the base member and also both sides of the base member, and roughness of the surfaces of the coated granular

material is smaller than the roughness of the base member.

19. A recording medium used in an ink-jet copier that has: a scanner unit which reads an original image placed on an original table, so as to form image data therefrom in sequence; a recording unit having a multi-nozzle-type ink-jet recording head which jets ink with a frequency of 1kHz through 40 kHz per nozzle on demand, the ink-jet recording head is arranged so as to jet a plurality of colors of ink, said recording unit jetting ink onto a recording surface of the recording medium based on the image data provided from the scanner unit; a recording medium conveyance unit disposed below the printing unit for conveying and ejecting the recording medium in a predetermined timing according to the recording operation, said recording medium conveyance unit has a conveyance unit and conveyance path that convey the recording medium into a position that faces the nozzle surfaces of the multi-nozzle-type ink-jet recording head and convey the recording medium, one side of which has been already printed, into the

printing unit again in order to print image onto the other side thereof; and a unit which enables to print image on the recording medium such that the vertical orientations of the images printed on both sides of the recording medium are coincide with each other, comprising:

a base member; and

granular material coated inside the base member and also both sides of the base member, and the roughness of the surfaces of the coated granular material is smaller than the roughness of the base member.

20. The recording medium as claimed in claim 19, wherein both sides of the granular material is substantially symmetrically coated on the base member with respect to the center line of the base member.